



BGA HOT AIR BGA REWORK STATION

(Model No: KID-R580)

USER MANUAL V1.0



Shenzhen W-KIDI Technology Co., Ltd.

Exclusive @ theBGASTore Ltd

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I. Installation and Operating Precautions

To ensure safety and prevent possible damage to the rework station, it is required to install the rework station at a location complying with the following conditions.

- ◆ Away from inflammables.
- ◆ Free from splashing of water or other liquids.
- ◆ Free from the direct airflow impact from air conditioner, heater or ventilator.
- ◆ With good ventilation, dry location, free from excessive dust.
- ◆ Free from vibration or shock, at a stable and flat location.

Power Supply

Power and voltage should meet the following requirements:

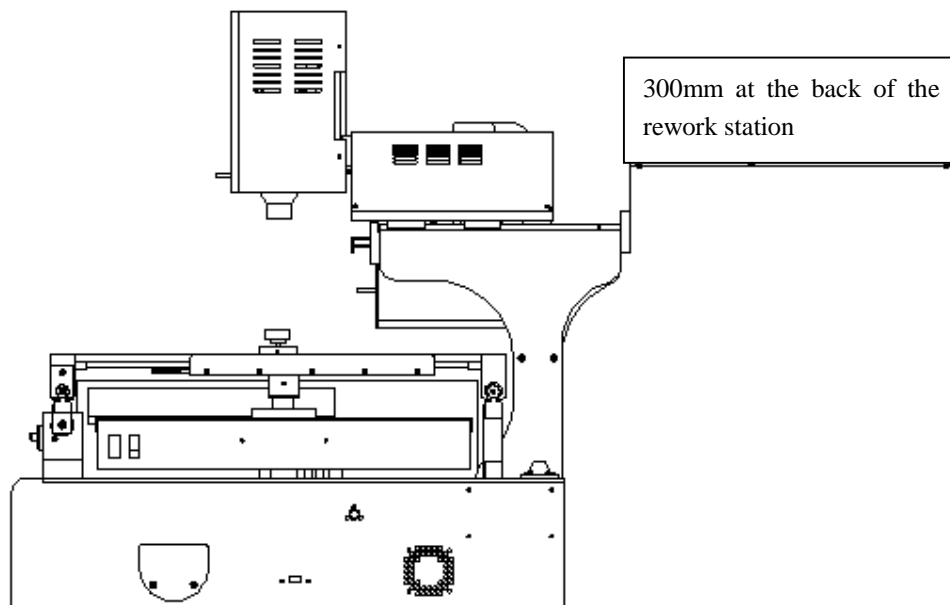
- ◆ Use the power supply with little voltage fluctuation

Voltage fluctuation: $AC220V \pm 10\%$ 。

Frequency fluctuation: $50/60Hz \pm 0.3\%$

Space Requirements

To facilitate operation, component replacement and maintenance for the rework station, it is required to reserve >300mm space at the back of the rework station.



Operating Precautions

While using the rework station, please follow the following operating precautions:

1. After turning on the power supply master switch of the rework station, check whether there is airflow/wind blowing from both upper and lower hot air heaters. If no wind blowing, do not heat, otherwise the heaters will get burnt.

Note: bottom IR heater area should be made good use of according to PCB size, so as to reduce power consumption.

2. Set the different profiles for various BGA to be reworked. The maximum set temperature of any segment of the profile shall be less than 300 °C. Refer to the BGA tin bead welding profile for the temperature setting while using the lead-free rework.
3. Check the PCB plate soldering-pan and BGA tin beads one by one prior to the installation of BGA; check the appearance one by one after the BGA welded, and stop installing the BGA and measure the temperature if any abnormal symptom occurs. The welding can be continuously performed only after the proper adjusting; otherwise it may damage the BGA or PCB plate.
4. Regularly clean the surface of the machine. In particular, keep the IR heating plate surface clean, and prevent the contaminated material deposits on it. The deposits may affect the proper heat radiation and result in the poor welding quality as well as considerably reduce the lifetime of the IR heating body.
5. Untrained operator can't change the setting parameters.
6. Avoid electric fans or other equipment blowing towards the rework station while it is working or it may cause abnormal temperature rise in heating zone and thus the work piece will get burnt.
7. Keep the heating zone away from inflammables after startup or it may cause fire or explosion; put the PCB for process onto the PCB supporting racks.
8. To avoid burn, please wear heat-proof gloves and never touch the high-temperature zone while working.
9. Never use inflammable sprays, liquids or gases at any location close to the rework station while the machine is working.
10. Don't remove the front panel or cover of the electric cabinet because the electric cabinet contains HV (high voltage) components which may cause electric shock.
11. In case any metal or liquid accidentally falls into the rework station while working, shut off power and remove power line immediately. Remove such foreign matter or contaminants after the machine cools down. If contaminants remain there, they may give off bad smell after restart.

12. If the rework station hasn't been powered on long, batteries in PLC are possible to be used up, resulting in parameter missing, so you need to set parameter again. Or regularly power it on to charge PLC in case data gets lost.



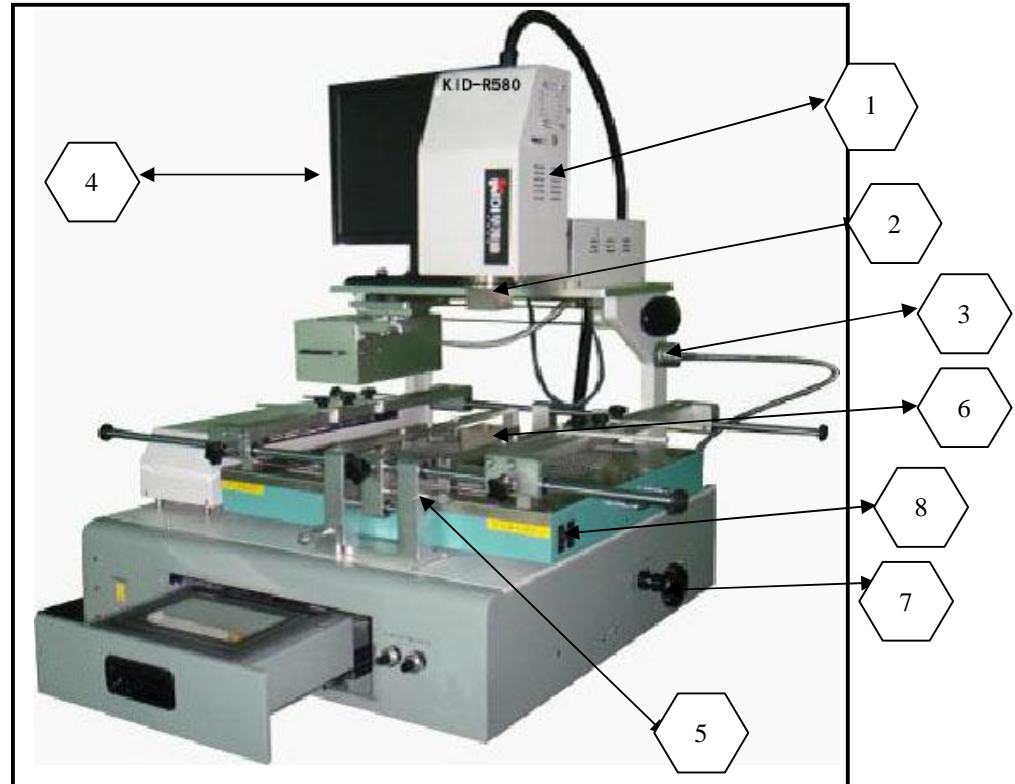
If the heating body is burnt due to this cause, our company is not responsible for free replacement.

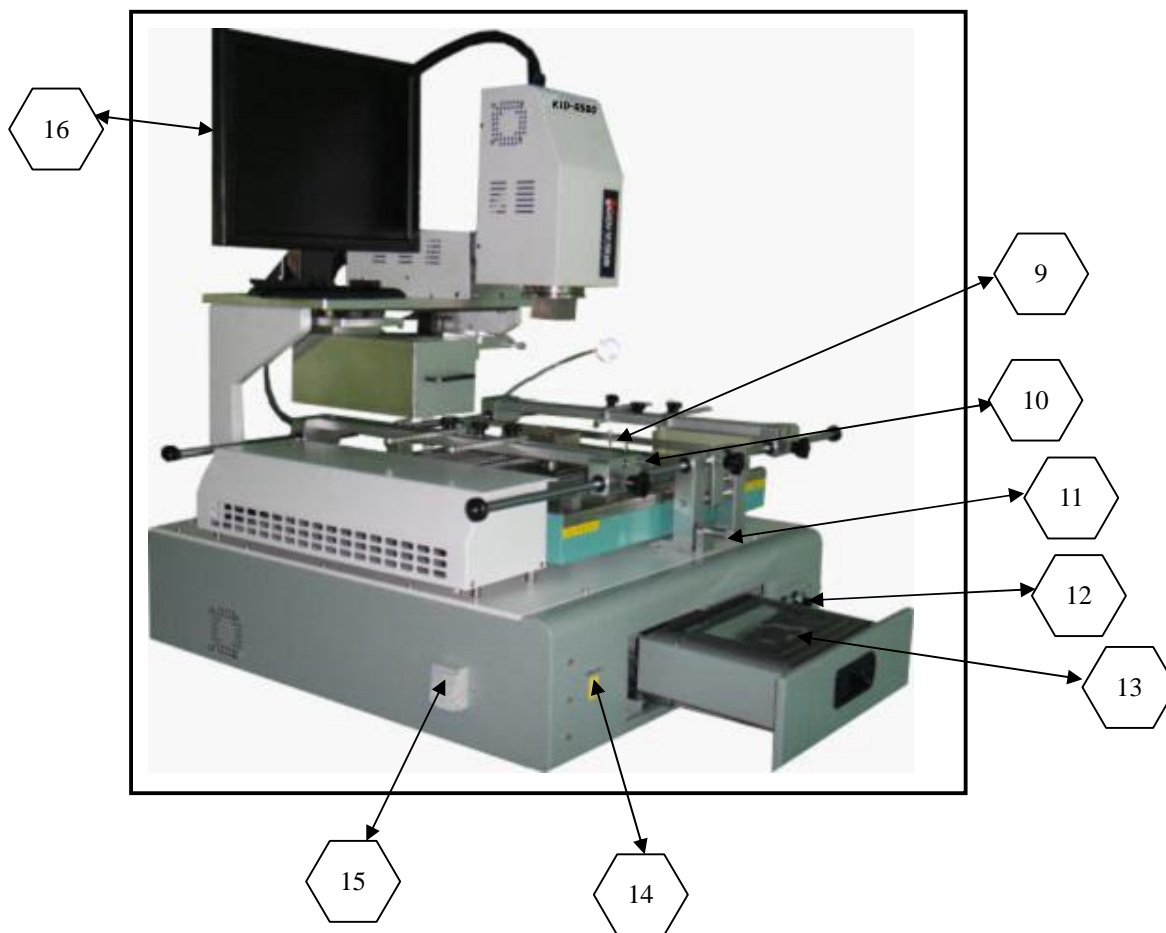
NOTE: Never clean the IR heater (heating panel) with liquids; the stubborn dirt on it can be cleared of with sand paper.

II. Introduction of Rework Station

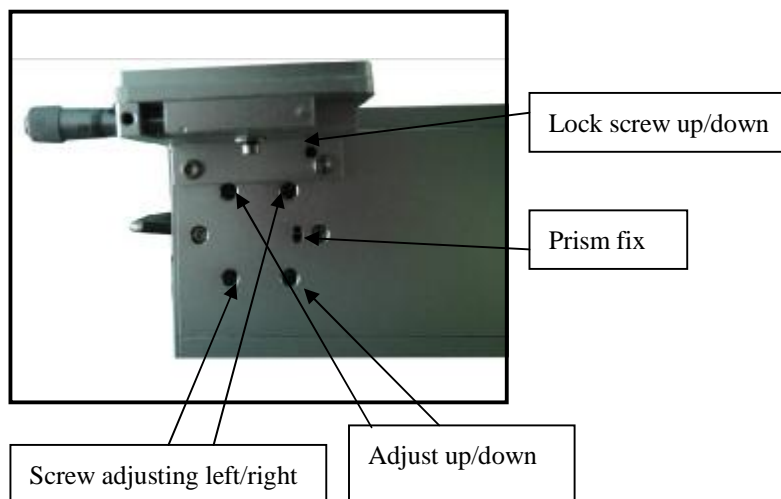
KID-R580 rework station is the integrative design with host and electricity box 2 in 1.

KID-R580 overall schematic diagram:





Optical system:



Parts name:

1. Upper heater
2. Upper nozzle
3. Light
4. Optical alignment system
5. Y direction adjust knob
6. PCB clamping device
7. Knob for adjusting lower nozzle up/down
8. Bottom heaters switch
9. Lower nozzle
10. Bottom IR heater
11. X direction adjust knob
12. Knob for adjusting light up/down
13. Touch screen
14. Wire sensor connector
15. Power switch
16. Display screen

III. Operating Procedures

BGA rework on PCB should comply with the following procedures:

1. Bakeout:

Both PCB and BGA chip must be baked in a constant temperature oven with a temperature range from 80°C~100°C for 8h~20h. The purpose for baking is to dehumidify the PCB as well as the BGA in case crack phenomenon occurs during rework.

Table1 moisture sensibility grade:

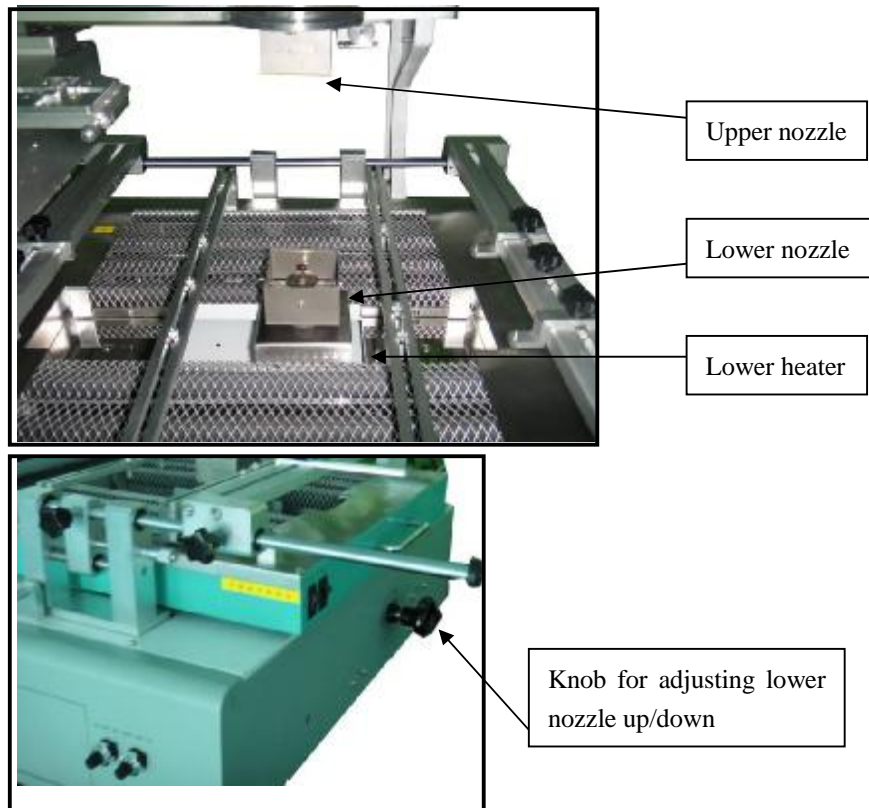
Grade	Time	Environment (RH: Relative humidity)
1	timeless	≤30°C/85% RH
2	1 year	≤30°C/60% RH
2a	4 weeks	≤30°C/60% RH
3	168 Hs	≤30°C/60% RH
4	72 Hs	≤30°C/60% RH
5	48 Hs	≤30°C/60% RH
5a	24 Hs	≤30°C/60% RH
6	Refer to labeled time	≤30°C/60% RH

Table 2: Bake time

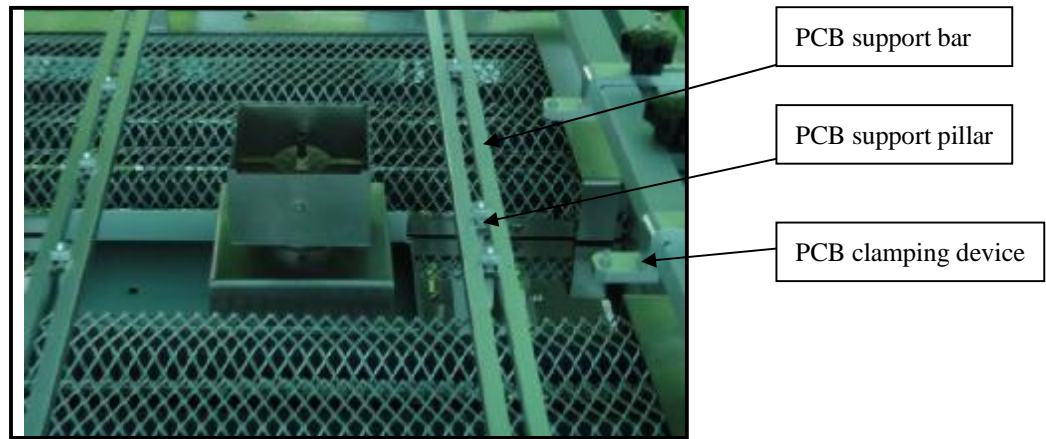
Seal thickness	Humidity sensibility grading	Baking time
≤1. 4MM	2a	4 Hs
	3	7Hs
	4	9Hs
	5	10Hs
	5a	14Hs
≤2. 0MM	2a	18Hs
	3	24Hs
	3	31Hs
	5a	37Hs
≤4. 0MM	2a	48Hs
	3	48Hs
	3	48Hs
	3	48Hs
	5a	48Hs

2. Clamping board:

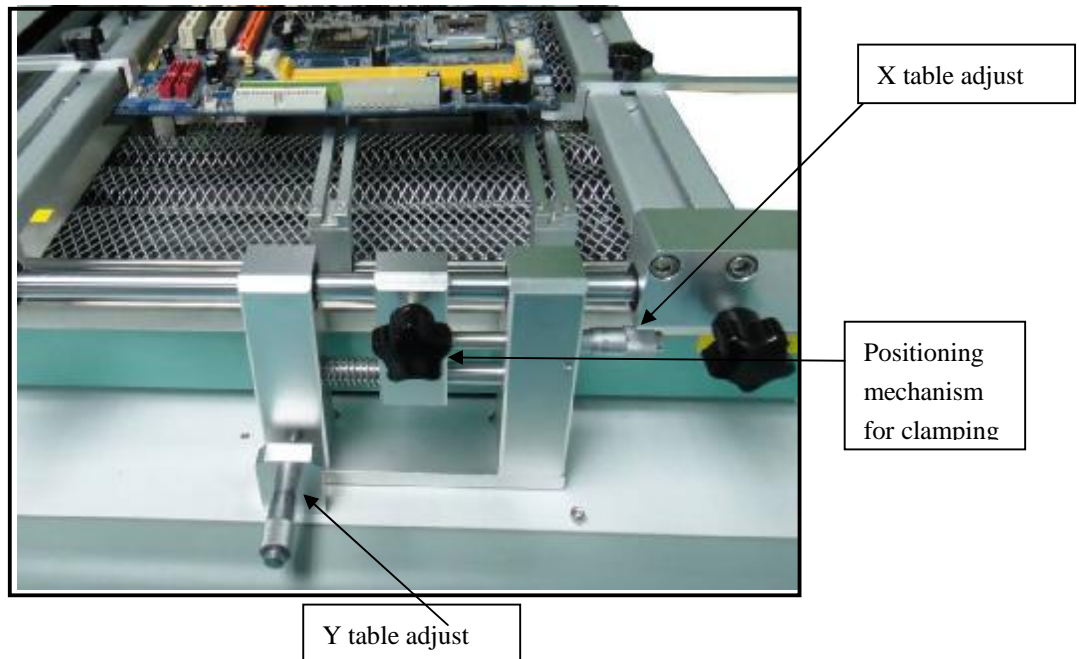
2. 1. To choose upper nozzle and lower nozzle suitable for BGA size
2. 2. Upper nozzle is fixed onto the upper heater head. It can be adjusted according to BGA's position and angle. Lower nozzle is fixed on the lower heater head. It can be adjusted by rotating knob adjusting lower nozzle up/down.



2. 3. Adjust PCB clamping device and PCB support bar, close up the clamping device and support bar both sizes before putting PCB on it, then lift the PCB support pillar(which can be adjusted to a proper position according to PCB size) and make it be in line with the stage of the PCB clamping device(which prevents the PCB from getting deformed). Refer to the following picture:



2. 4. Put PCB onto the support bar, then align BGA chip with the upper and lower nozzles, make their cores in one line. Adjust PCB clamping device till the board is in the stage of the clamp device, finally lock the positioning mechanism for clamping.
2. 5. Adjust X & Y table till BGA chip sitting underneath the upper nozzle, then lock the positioning mechanism for clamping. Refer to the following picture:



Conclusion:

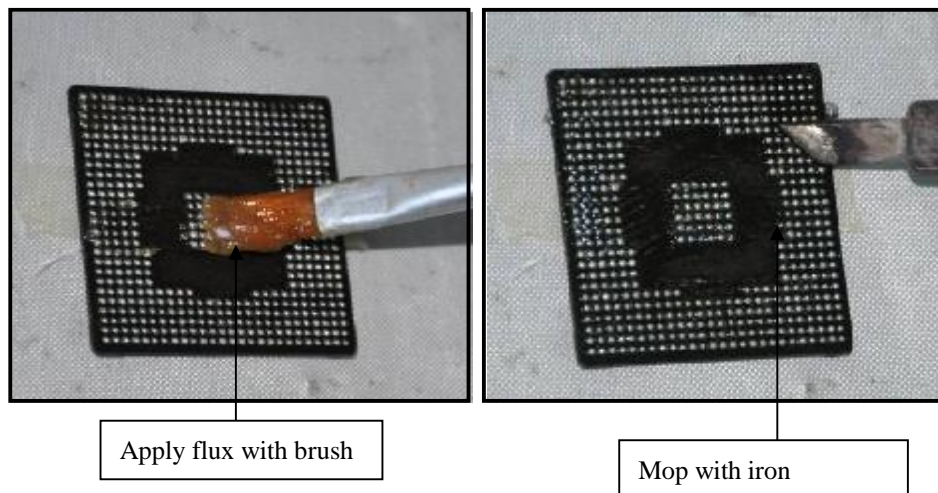
A qualified board clamping should be as follows: The whole PCB must be inside of the bottom area IR heater, so that it can be heated evenly. The upper nozzle must properly cover the BGA, so that the chip can be heated evenly. Besides, the cores of BGA chip, upper and lower nozzle must be in one line. The PCB support pillar should touch the board lightly. The lower nozzle can support the lower surface of the PCB.

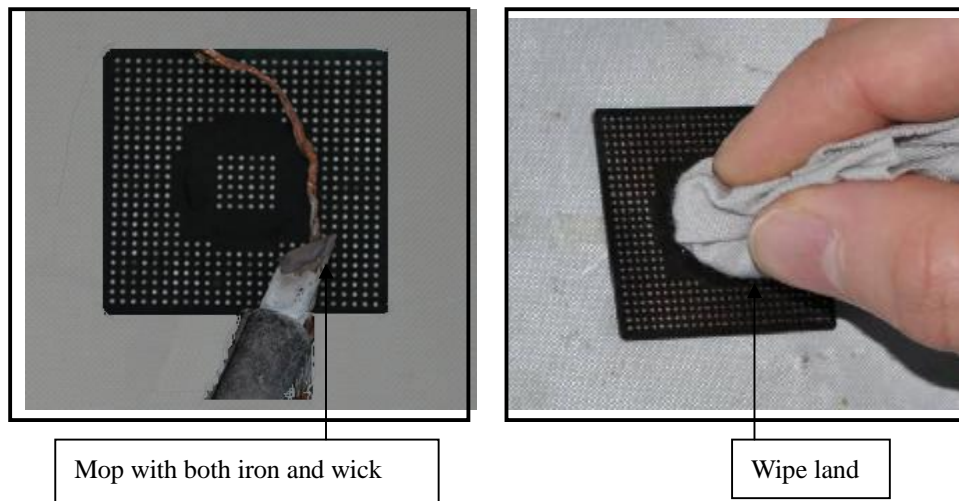
3. Desolder: Clip PCB to the board supports, clamp and fix the PCB as what we introduced above, choose a proper nozzle and a correct profile, then press on ‘down’ till the upper heater head reaches the proper position, finally click “desolder”. When heating finishes, the system will go down automatically. When the suction nozzle touches BGA, the vacuum will start at once automatically and pick up the BGA. Take away the PCB from the supports and BGA from the suction nozzle only when cooling finishes.

4. Clean land :

The PCB land and BGA land must be cleaned in a short time after desoldering, because the damage to the land is small while the PCB or BGA haven’ t cooled off completely. Please refer to the following steps. (Cleaning PCB is the same)

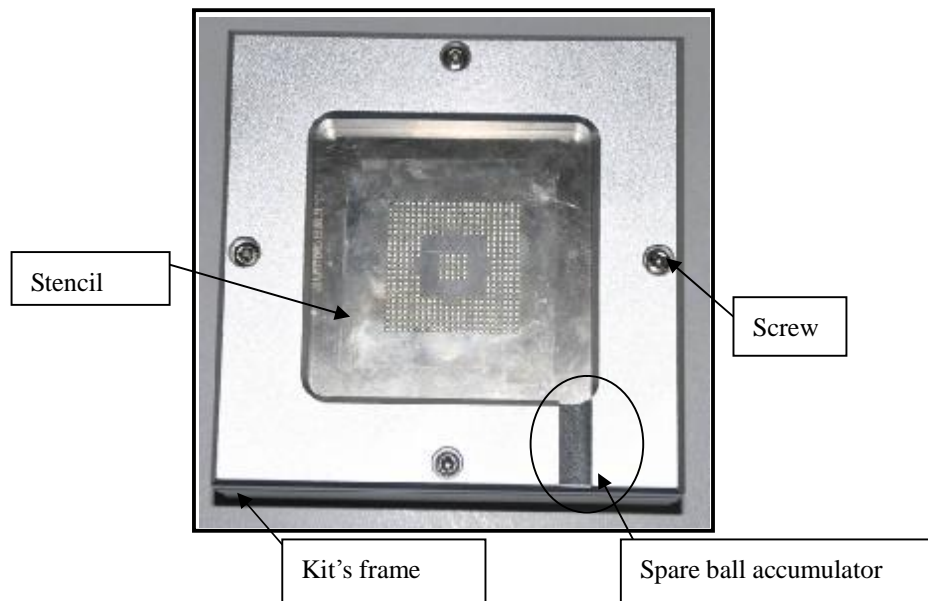
4. 1. Prepare a soldering iron with temperature 370°C(for leadfree chip) and 320°C (for leaded chip)
4. 2. Apply a small layer solder flux to BGA equally
4. 3. Mop the chip with the soldering iron to clean it.
4. 4. Take a wick to clean the pad until it is neat.
4. 5. Wipe land: To ensure the reliability of BGA soldering, wipe the pad with some volatile solvent as strong as possible, such as industrial alcohol.



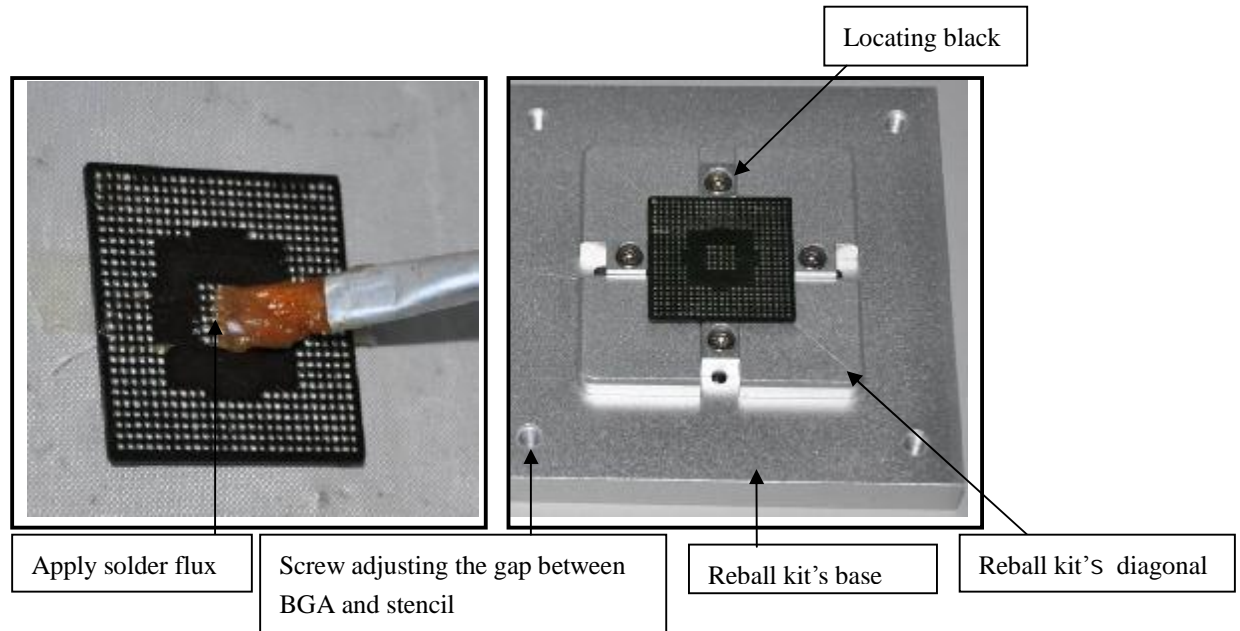


5、BGA Reball:

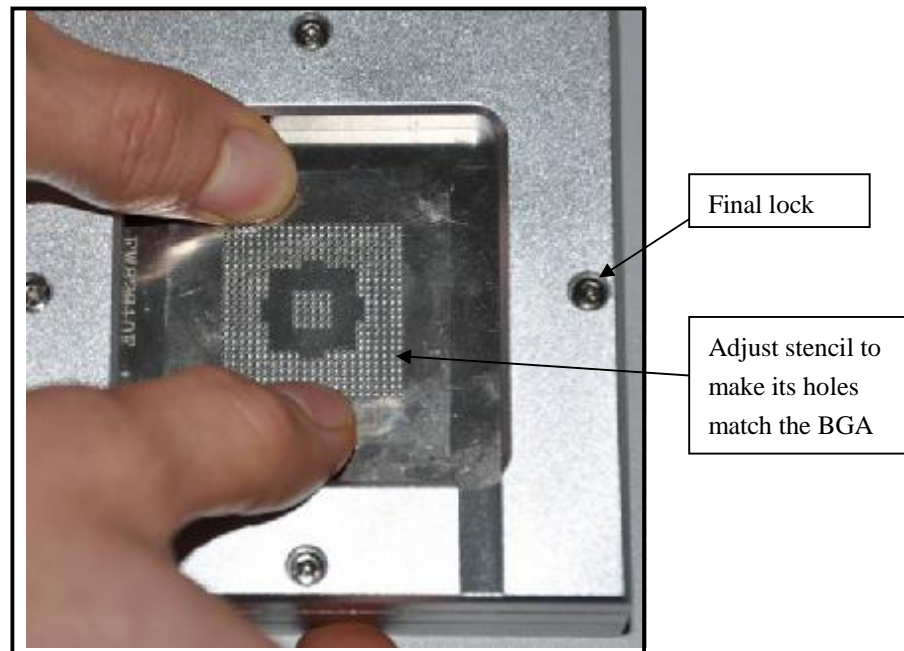
5. 1. Choose a stencil, a reballing kit and proper solder ball that match the BGA, put the stencil between the kit's frame and cover, then rotate the screw to lock up.(But please do not lock it tight, so that it can be fine-adjusted and moved)



5. 2. apply solder flux to BGA equally, then place BGA as the picture showing below; adjust the locating block to make BGA's diagonal and the reball kit's diagonal match together, only in this case the BGA is located in the center of the reball kit; finally lock the four locating block it fix it.



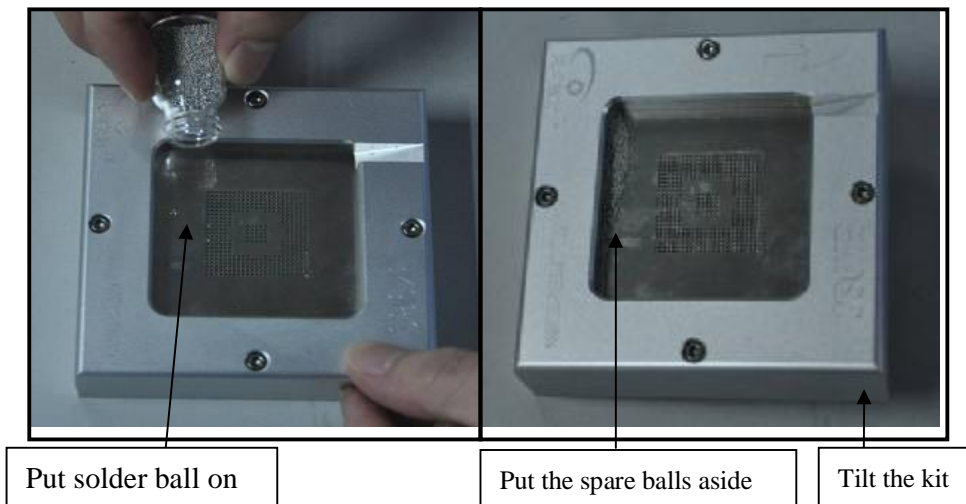
5. 3. Put the cover with stencil inside over the kit; then move the stencil lightly to make its holes match the BGA pins. In case this method is not good enough to make stencil's holes and BGA pins match each other, (pay attention to the deviation place) open the cover (frame), readjust BGA and repeat all those actions only to make sure the stencil's holes match the BGA pins; finally lock; on the contrary, you have to fine-adjust the stencil.



5. 4. Adjust the gap between BGA and stencil. By adjusting the Screw adjusting the gap between BGA and stencil, we can make the gap between BGA and the stencil $\frac{2}{3} \sim \frac{3}{4}$ of the ball

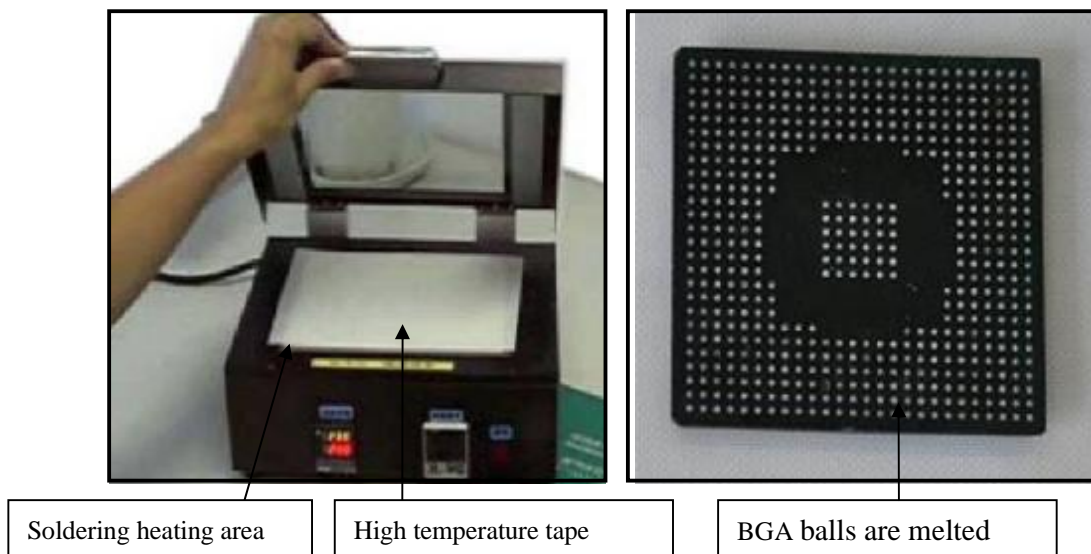
diameter. Make sure one hole for one ball going through only and it is convenient to take out the stencil.

5. First, exam whether the solder ball size matches the chip and stencil; second put it on the stencil as the following picture shows, then shake the whole kit lightly to let the ball drop to the BGA chip through the stencil' s holes. Finally check whether every pin has been reballed (make sure no pin missing), then we can put the spare balls aside and take out the cover.(note that tilt the kit while taking out the cover in case that the reballed balls go out together with the stencil. After that, the qualifiedly-reballed BGA can be taken out.(At this time if some pins found missing(not yet reballed), we can make it up by a right tweezers. After reballing completely, collect the spare balls.
6. When change for other BGA chip of different size as well as solder ball, please repeat steps 1-4



6、 BGA reball soldering

- 6.1. Prepare a soldering station for BGA reball soldering, set soldering station temperature at 230℃ for leaded BGA and 250℃ for lead-free BGA
- 6.2. After setting temperature, start the soldering station and wait for the temperature going up to the required value and being constant.
- 6.3. When the temperature keep constant, put the reballed BGA onto the soldering station with a high-temperature paper underlaid to heat, meanwhile use a hot air gun as a assistant heating from the upper surface.
- 6.4. When the balls are melted, they become liquid with light color and line up. Also it will give off fumes. Seeing this, stop heating and take away the BGA from the station.



7. Apply solder flux:

7.1. To guarantee soldering quality; make sure that the PCB pad is free of dust before applying solder flux. The best way is to wipe the pad before applying solder flux every time.

7.2 Apply a layer of soldering flux on the PCB solder pad with a brush pen. Excessive flux may result in the balls shorted, in reverse, it easily causes missing solder. So the soldering flux coating shall be even with a proper amount so as to remove the dust and foreign materials from the BGA tin beads and improve the welding effect.

(Applying solder flux to BGA is the same)

8、Alignment with optical system:

8.1. First clamp the PCB.

8.2. Initially the BGA is on the PCB. Pull out the camera, observe the PCB pad through the display screen, press 'zoom in /out' on the remote control to adjust the image, press 'in/out focus' until the image on the display screen is clear enough. After that, start vacuum to pick up BGA, then micro-adjust the upper heater head until the balls of BGA can display on the screen.

9. Solder:

After alignment (carry on the previous step), select a suitable profile and nozzle, lower the heater head until the gap between the nozzle and BGA is 1MM, then click " solder " on the touch screen and the system will begin heating. Once heating completes, the upper heater will go back to its initial place automatically, meanwhile cooling starts. When cooling finishes, the renew PCB can be taken away from the clamping device.

IV. Touch Screen Control

Turn on the machine. The touch screen will automatically POWER ON, as shown in picture-1 and picture-2

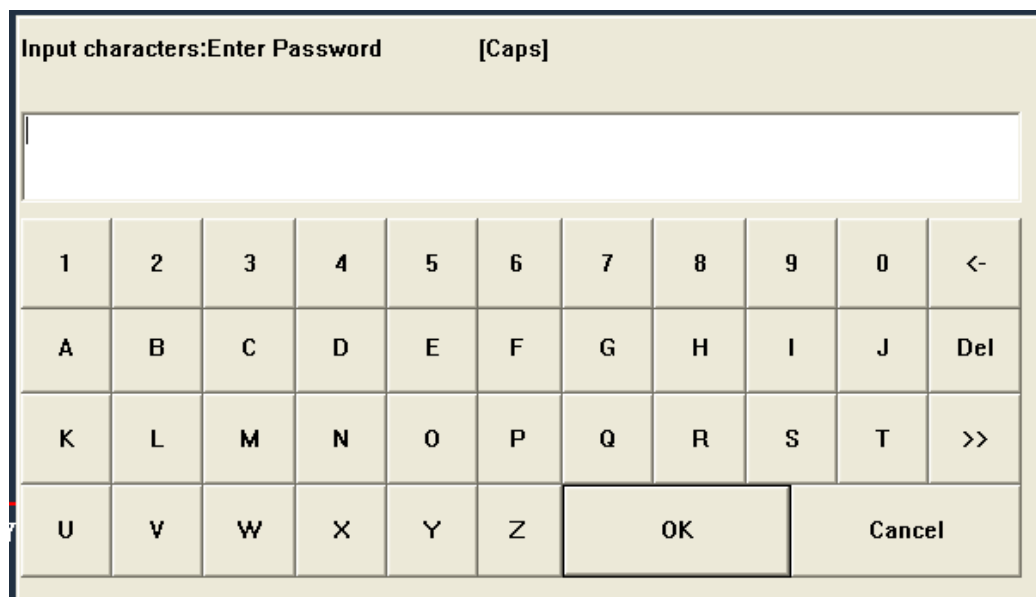
Model No.: KID-R580 hot air BGA Rework Station

Version No.: V1.05



Picture-1

(User password: Click it to input operation password or debugging password, and then accordingly, the screen switches to enter “operation mode” or “debugging mode” interface automatically)



Picture-2

User's right is shown as: (the user can change the password)

User name	Password	Group	User right
1	A	Operator	Enter only for operation mode. Under this mode, only operation can be done with no parameters modified
2	HKD	Engineer	Enter for debugging mode, profile parameters can be changed and saved.

1. Operation/Debugging mode interface (as shown as picture-3)

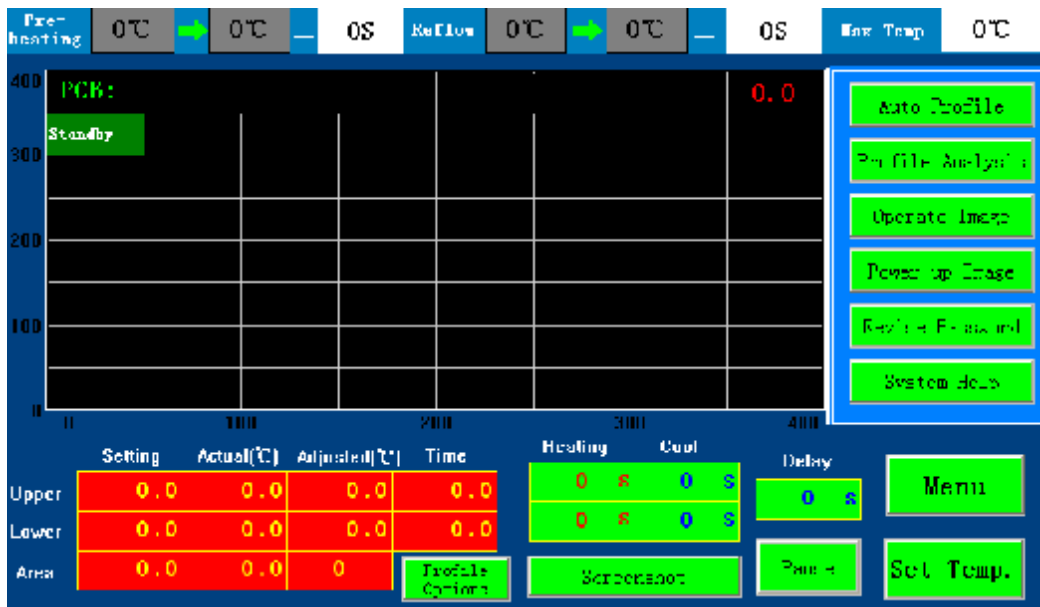


Picture-3

- l **PCB:** The current temperature profile name
- l **Standby:** display the temperature profile status, non-heating status will show “stand by”, heating status will display the current temperature parameter segment No.
- l **Reflow:** the first column for setting the low reflow temperature; the second column for setting the high reflow temperature; the third column shows the time taken from the low reflow temperature to the high reflow temperature
- l **Max temp.:** display the max temp. and record again when start heating
- l **Align:** click “Align”, the upper head automatically move up/down to the alignment position, meanwhile, the alignment camera lights on.
- l **Solder:** to click it and then, the upper head automatically moves down to perform

soldering function

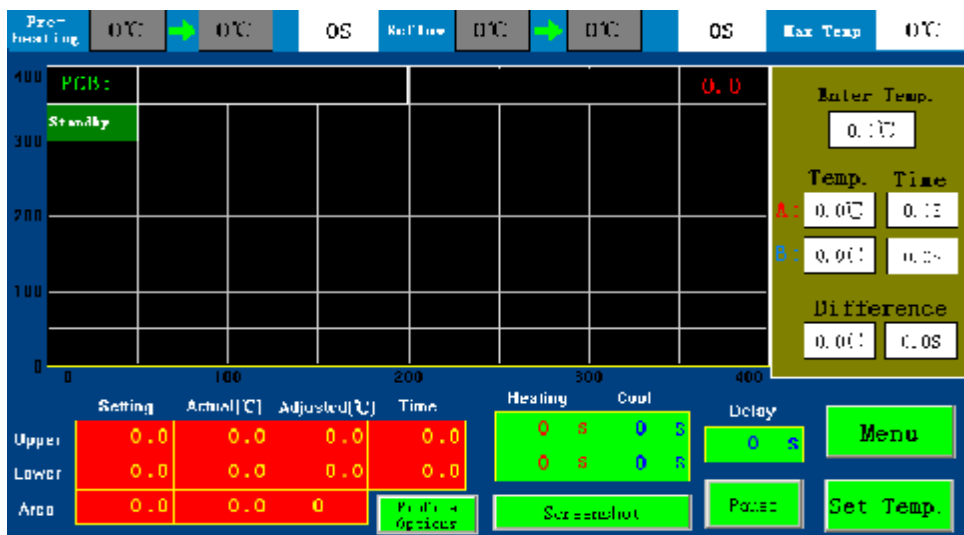
- | **Desolder:** auto-desolder on the basis of the setting parameters downloaded
- | **Stop Heat:** only stop the current temperature profile, the following actions of machine will continue to perform.
- | **Vacuum:** click button---vacuum starting (button color becomes pink); Re-click---vacuum off (button color becomes red)
- | **Cool:** start or stop cooling fan by hand (Remark: forbid opening it during the heating, and do not close it during the cooling time)
- | **Setting:** display the current working segment setting temperature
- | **Actual (°C) :** display actual detection temperature
- | **Adjusted (°C) :** change the current setting temperature, but only available after finishing the first segment of temperature file. (Remark: it is unchangeable in the operation mode)
- | **Time:** change the current setting constant temperature time, but only available after finish the first segment of temperature profile. (Remark: it is unchangeable under the operation mode)
- | **Upper/lower/Area:** the corresponding temperature parameters
- | **Heating:** 1) the running time in the current temp. segment 2)the total heating time
- | **Cool:** 1) cooling count down display 2) the total cooling time set for fan
- | **Pause:** click this button to prolong the heating time, the prolong time will be displayed in the “Delay”
- | **Screenshot:** save the current profile running picture to the USB flash memory
- | **Set Temp.:** to enter the temp. setting interface; change parameters or download profile
- | **Profile options:** select one temperature profile saved before.
- | **Menu:** click it, and then popup window as following picture-4



Picture-4

- l **Auto Profile:** auto-generate profiles
- l **Profile Analysis:** enter the profile analysis interface and can perform the analysis
- l **Operate image:** close the current window, and return to the operation interface
- l **Power up image:** back to the start screen
- l **Revise password:** modify operation and debugging password (only display in the debugging mode)
- l **System help:** brief description for temperature profile setting

2: Profile analysis interface (as shown as picture-5)



Picture-5

- l **Enter Temp.:** enter the temperature value
- l **A:** corresponding temperature and time values(red color)
- l **B:** corresponding temperature and time values(blue color)
- l **Difference :** temperature difference between A and B; time difference between A and B

3、 Temperature setting interface(as shown as picture-6/7)

PCB		Nozzle								
Upper	1	2	3	4	5	6	7	8	Preheat	Upper Offset
Rise(S)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0	0
Temp.	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	IR Area	Lower Offset
Time	0	0	0	0	0	0	0	0	0	0
Lower	1	2	3	4	5	6	7	8	Alarm	Cool Time
Rise(S)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0	0
Temp.	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	Preheat Power	Cooling delay
Time	0	0	0	0	0	0	0	0	0	0

Save

Picture-6

- l **PCB:** the current temperature profile name
- l **Nozzle:** display the nozzle size
- l **1~8:** temperature segment No.
- l **Required Time:** the rise time from the current temperature to the set temperature
- l **Temp.:** the target temperature in the current segment
- l **Time:** the constant temperature time in the current segment
- l **Pre-heating Temp.:** the bottom IR temperature in standby status
- l **IR area:** the bottom IR temperature in the working status
- l **Alarm:** start alarming in the rest 5s of constant temperature time in the last segment
- l **Pre-heating power:** display the pre-heating power limitation, eg.: “0”—off “50”—the percentage of the bottom IR power used
- l **Upper Temp. offset:** the compensation for the actual output temperature of the upper part, eg.: 5”—increase 5degree, “-5”— decrease 5degree.

- l **Lower Temp. offset:** the compensation for the actual output temperature of the lower part, eg.: 5"--increase 5degree, "-5"-- decrease 5degree.
- l **Cool time:** the required cooling time after heating finishes and cooling fan starts running.
- l **Save:** save parameters according to the PCB name, and system will remind user if any duplicate names.

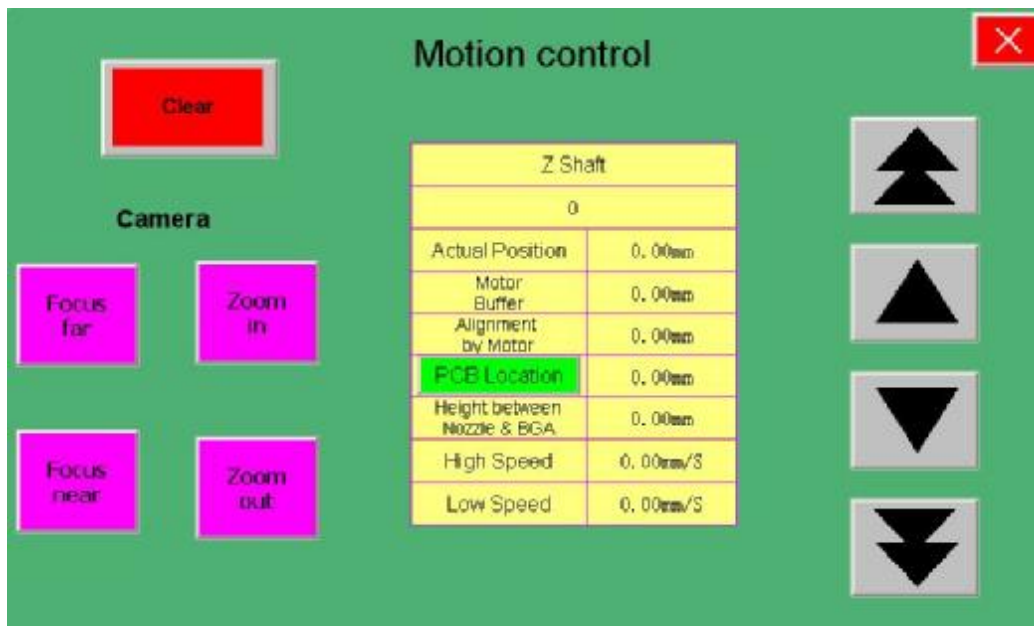
PCB										Nozzle			
Upper	1	2	3	4	5	6	7	8	Preheat	Upper Offset			
Rise(\$)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0	0			
Temp.	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	IR Area	Lower Offset			
Time	0	0	0	0	0	0	0	0	0	0			
Lower	1	2	3	4	5	6	7	8	Alarm	Cool Time			
Rise(\$)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0	0			
Temp.	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	Preheat Power	Cooling delay			
Time	0	0	0	0	0	0	0	0	0	0			

Save
Edit Formula
Download

Picture-7

- l **Save:** save parameters according to the PCB name, and system will remind user if any duplicate names.
- l **Edit Formula:** enter temperature recipe management and edit window
- l **Download:** download the current selected parameters into the current usage parameters list.

4. Motion Control Interface (as shown as Picture-8)



Picture-8

Z shaft motor parameter

Clear: Motor returns to the original position

- l **Z shaft:** the current height of upper heater motor.
- l **Motor buffer:** the setting buffer height from which the upper head starts moving down slowly . The total height the upper head moves minus the buffer height is equal to the height for fast moving process.
- l **Alignment by motor:** the set height from which upper heater starts alignment, with auto-memory function; the alignment point can be auto-memorized in 3s after alignment process.
- l **PCB location:** when upper head mounts and drops below 120mm and suction nozzle touches BGA slightly, the current height is PCB location. (with auto-memory function)
- l **Height between nozzle and BGA:** when suction nozzle touches the BGA slightly, the height which the upper head bounces
- l Motor fast: the motor fast running speed
- l Motor Slow: the motor slow running speed

Camera control

- l **Camera in/out:** to enlarge or lessen the image sizes
- l **Focus near/far:** to adjust the focus of the lens ,adjust the clearance of image

4: Advanced Parameters interface (as shown as picture-8)



Picture-8

Proportion P: Prop gain of PID operation

Integration I: Integral time of PID operation

Differential D: Derivative time of PID operation

Remark: the meanings of upper, lower and IR PID parameters are same, but with different values. Please take the factory setting values as the final P/I/D values

Pickup lower limit: while picking up BGA from BGA holder, the max. height the upper head is allowed to move

PCB lower limit: while mounting and start heating, the max. height the upper head is allowed to move

Z Axial lead: when upper heater rolls one circle, the actual distance the **upper head moves**.

Save default: save the current system parameters as default, if the system parameter lost unexpectedly; the system will recovery automatically

Recover default: manually recover the system default parameters saved last time.

5. Auto-generate temperature profile (as shown as picture-9)

Standard Mode	High Temp. - Top	High Temp. - Bottom	Special Mode
PCB Corrected Value	0.0		
Nozzle Corrected Value	0.0		
High Temp. Control	220.0°C		
Copy Profile - Solder		Copy Profile - Desolder	
Superior Parameter	Auto Calculate	Help	Close

Picture-9

- l **Standard mode:** suitable for most of common PCB boards and BGA without special requirements, lower temperature is a little higher than upper temperature.
- l **High Temp.-Top:** Mainly for BGA with heat sink itself and good heat-resistance or some BGAs under which there are some heat reactive components. For this mode, upper temp. is higher than lower temp. Desoldering and soldering heating mainly depends on upper part, and lower heating is as an assistant.
- l **High Temp.-Bottom:** mainly for Crystal-naked BGA and double-layer BGA. For this mode, lower temp. is higher than upper temp.. Desoldering and soldering heating mainly depends on lower part, and upper heating is as an assistant.。
- l **Special mode:** Mainly designed for desoldering of glued boards and some boards with requirements for low peak temp.
- l **leaded / leadfree:** to gather the profile process changing for leaded and leadfree.
- l **Copy profile- Solder:** to use the latest auto-calculated profile to perform soldering.
- l **Copy profile-Desolder:** to use the latest auto-calculated profile to perform desoldering.
- l **Superior parameter:** as shown on picture-10, users don't need to change any parameters in normal situation, except for special process or auto-calculated profiles can't be used several times. In this situation, please contact factory for technical support

Adjusted Temp.	0.0°C	Max. Cumulated Increase	0.0°C
Increase Temp. Delay	0.0s	Allowed Tolerance	0.0°C
Pre-heating Temp. Tolerance	0S	Reflow Temp. Tolerance	0S
High Temp. Delay	0.0S	Wave Value Setting	0.0°C
High Temp. Tolerance	0.0°C		

Revise Parameter

Back

Picture-10

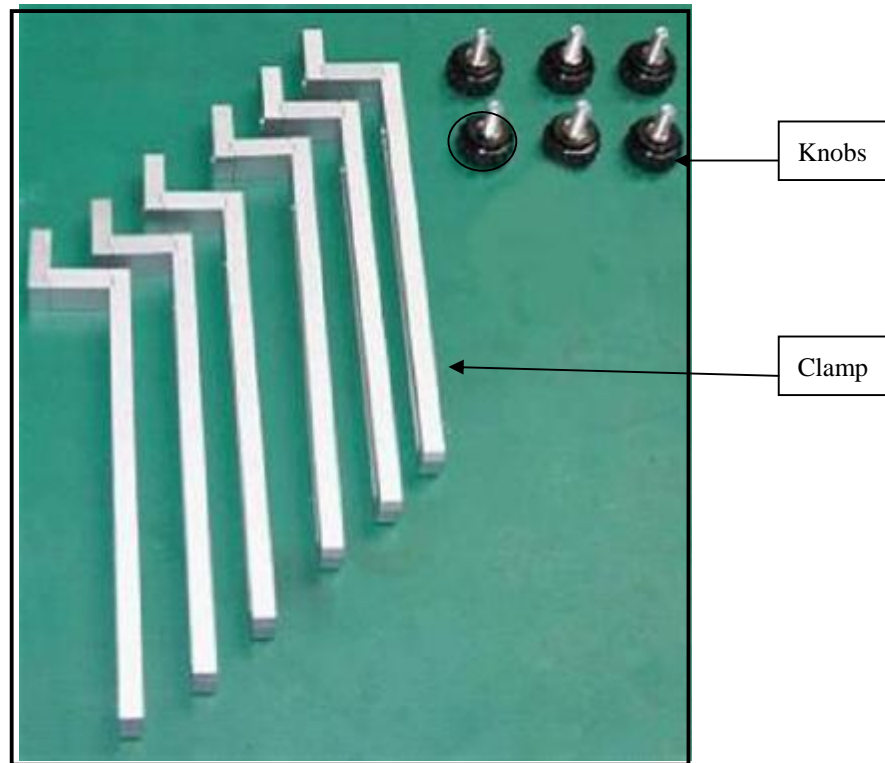
- I Auto calculate:** to perform desoldering, while heating, it auto-calculates and changes target profiles.
- I Help:** the relative help information about auto profile.
- I Close:** close the current window and exit from operation interface for auto-profile.

U Maintenance skill

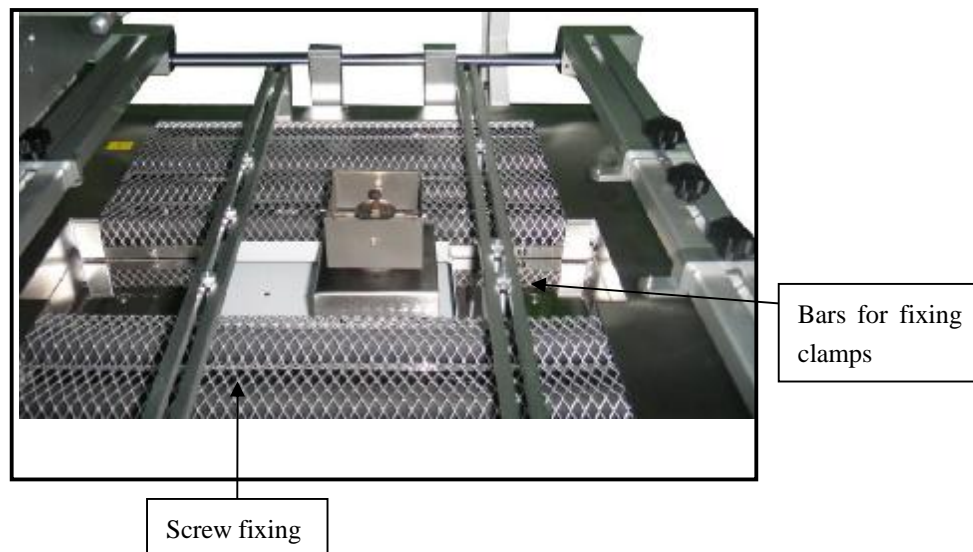
1. When we are not sure if the BGA is lead-free or leaded, for safety, we had better treat the BGA as leaded. Enter the leaded temp. profile, insert the wire sensor into BGA, start desoldering on the touch screen. Check if the BGA melted with nipper when the measured temp. up to 190°C. It is leaded BGA if the ball melt. It is lead-free BGA if the ball melt when 217°C.
2. Select proper profile based on BGA size and PCB thickness, We need to increase the bottom temp. if the PCB is too thick.
3. For usual computer board, the temp. setting are similar. The temp. for north bridge is several degrees higher than south bridge. In case the notebook PCB, the lower temp. setting is high with the upper temp. at 210-220°C for the display card. If the upper temp. setting is high, the balls on video memory will melt that will result in failed soldering.

VI. Installation of Supporting Clamp for Laptop PCB

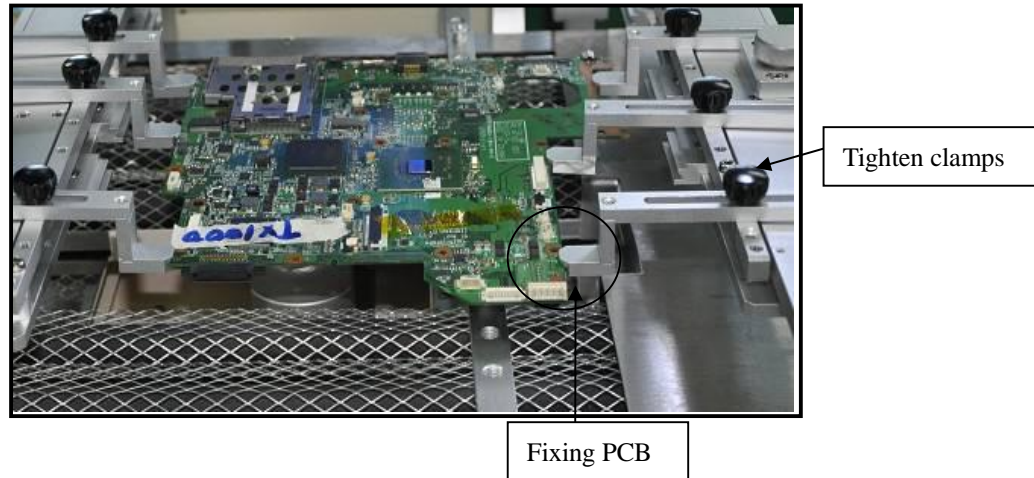
1. We offer a set of clamping device of Laptop PCB with 6pcs clamps, 6 pieces knobs, 4pcs spacer, 2pcs bars onto which clamps are fixed onto, shown as:



2. Place spacers under both ends of bars for fixing clamps, lock bars onto PCB supporting boards and later use knobs to fasten clamps, shown as follows:



1. Clamping laptop PCB, put PCB on the supports, make sure the cores of BGA, upper nozzle and lower nozzle are in a line. Adjust PCB clamping device, move clamps close to the left/right edges of PCB boards, which are stuck into Lamps' neck, tighten knobs to fix clamps onto PCB support board to make PCB board even. Refer to below Fig.

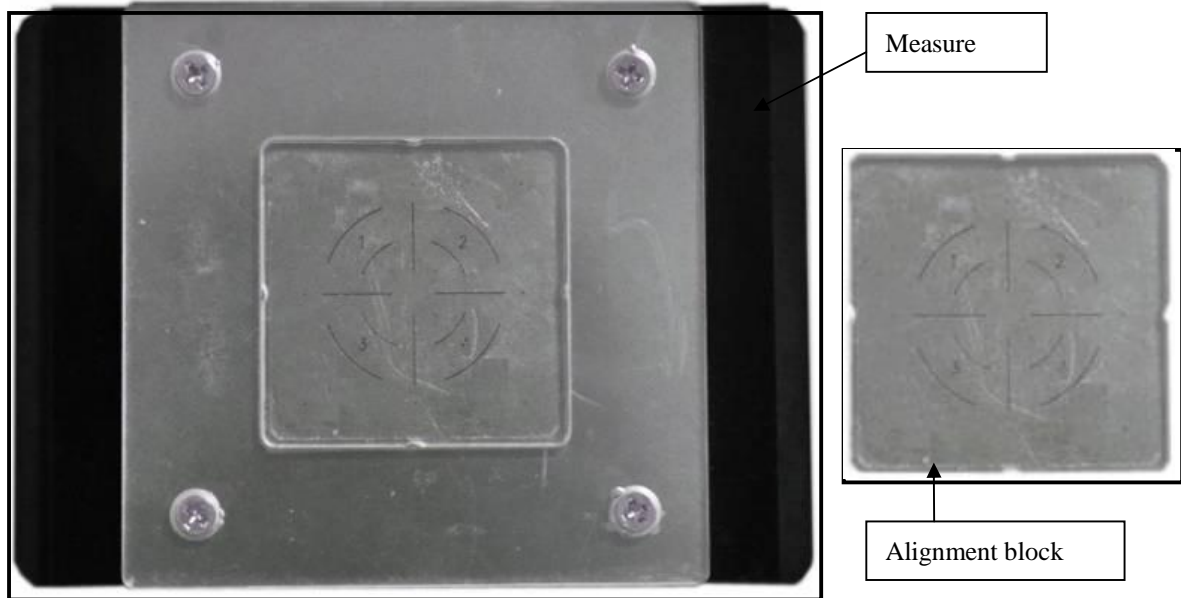


VII. Calibrating Camera

How to judge whether the camera has to be calibrated:

Due to the shaking during transportation or moving, the lens might get loosed which causes bad alignment while reworking PCB. In this case, we need to calibrate it. We can use a special measure to calibrate the camera, (We supply the special measure) or take a small IC align with the land. The following is the method taking a special measure to calibrate:

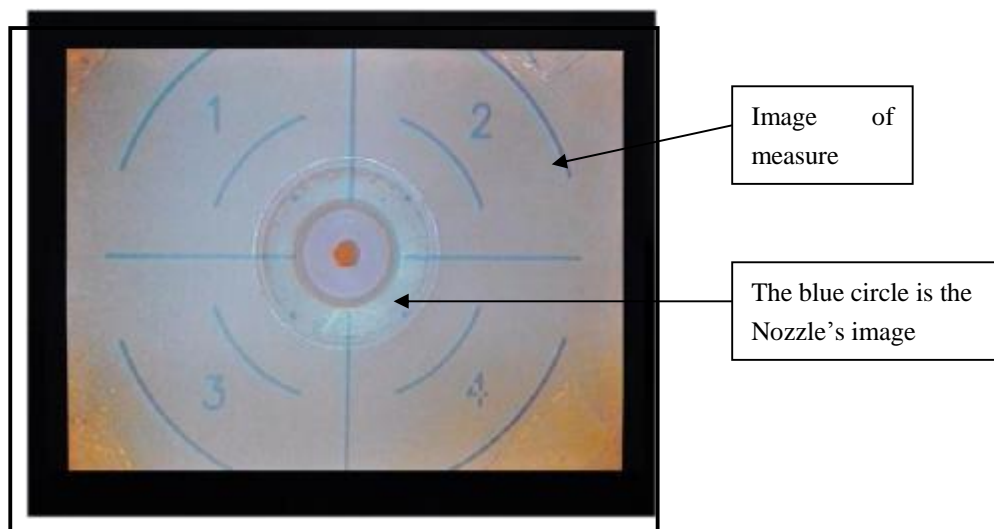
Lens calibration uses 2 measurement tools: 1. Measure 2. Alignment block



Procedures:

1. Clamp the measure to PCB clamping device, choose appropriate suction nozzle, observe the image on the display, adjust the measure until it is beneath the nozzle. As shown in picture-1

Fig.1



2. Click the locating button, the heater takes the Alignment block (As shown in Fig.2). When the lens moves to the alignment position, the alignment light is on. (As shown in Fig. 3)

Fig. 2.

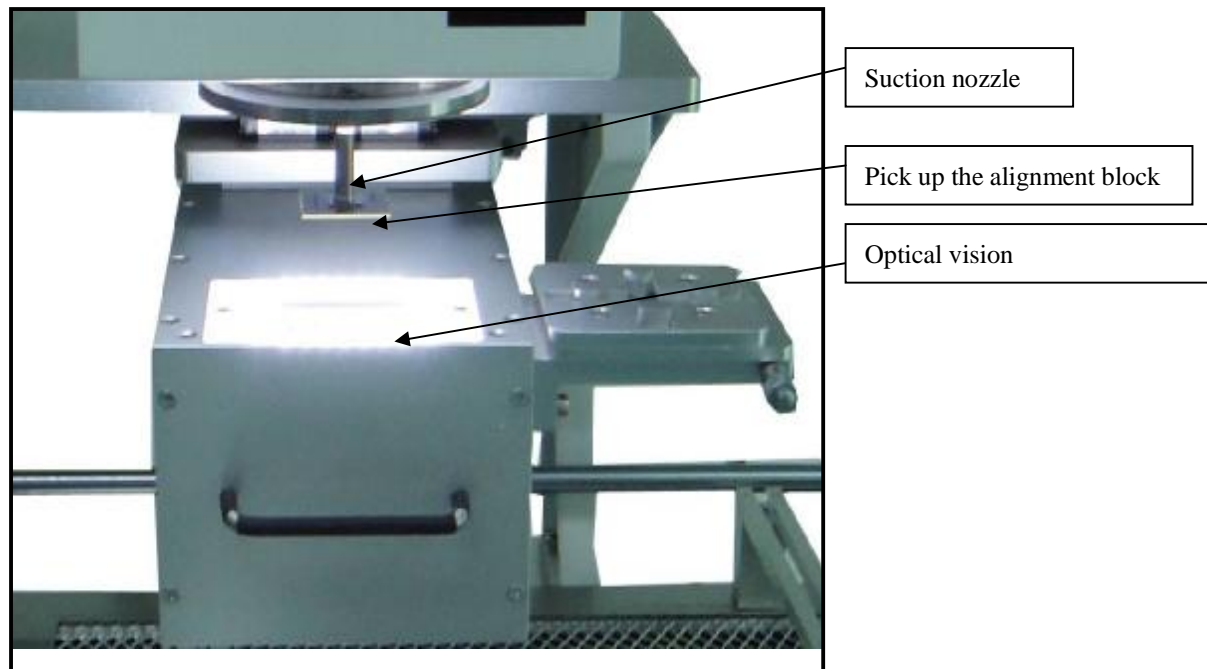
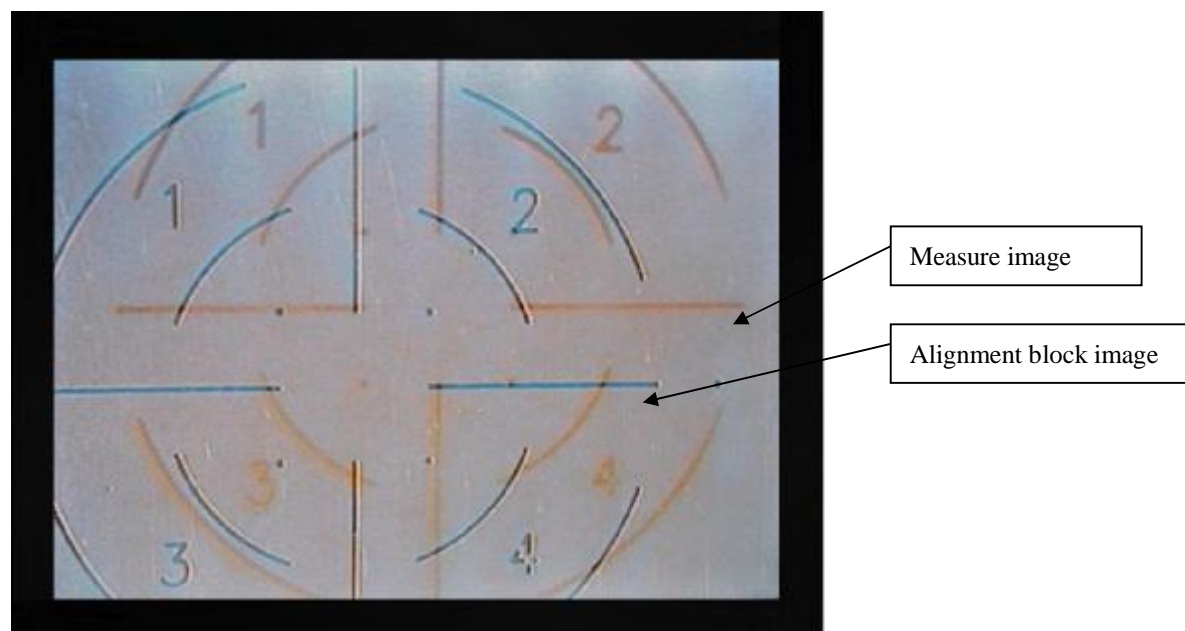


Fig. 3:



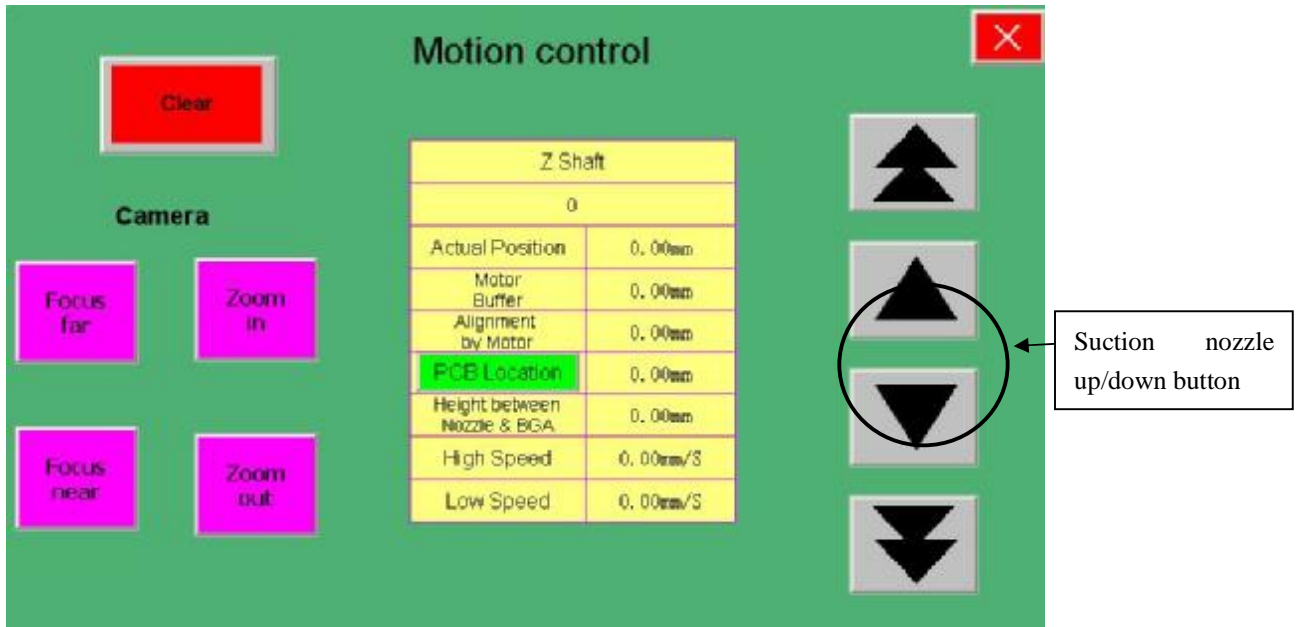
In Fig. 3, the measure image and alignment block image not matching accounts for calibration needed. On the contrary, the lens is OK.

Use remote control to zoom in/out to regulate the image in clear look for easier observation.

After measure image adjusted to definition status, adjust the alignment block image. On the touch screen to select debugging column and click the suction nozzle up/down

button (as per Fig. 4), adjust the height of lens and alignment block to make the alignment block image in best definition status.

Fig. 4



2. Make sure the camera is fixed before calibrating(the prism fixing screw is locked); Take a inner hexagon wrench to loose the up/down screw and adjust the camera up/down, observe the display screen to make the alignment block core and measure core match. Then lock the up/down screw. Adjust the left/right screw (refer to Fig. 5), make the alignment block and measure coincide. Lock the 4 screws after the two cores coincide. (refer to Fig. 5)

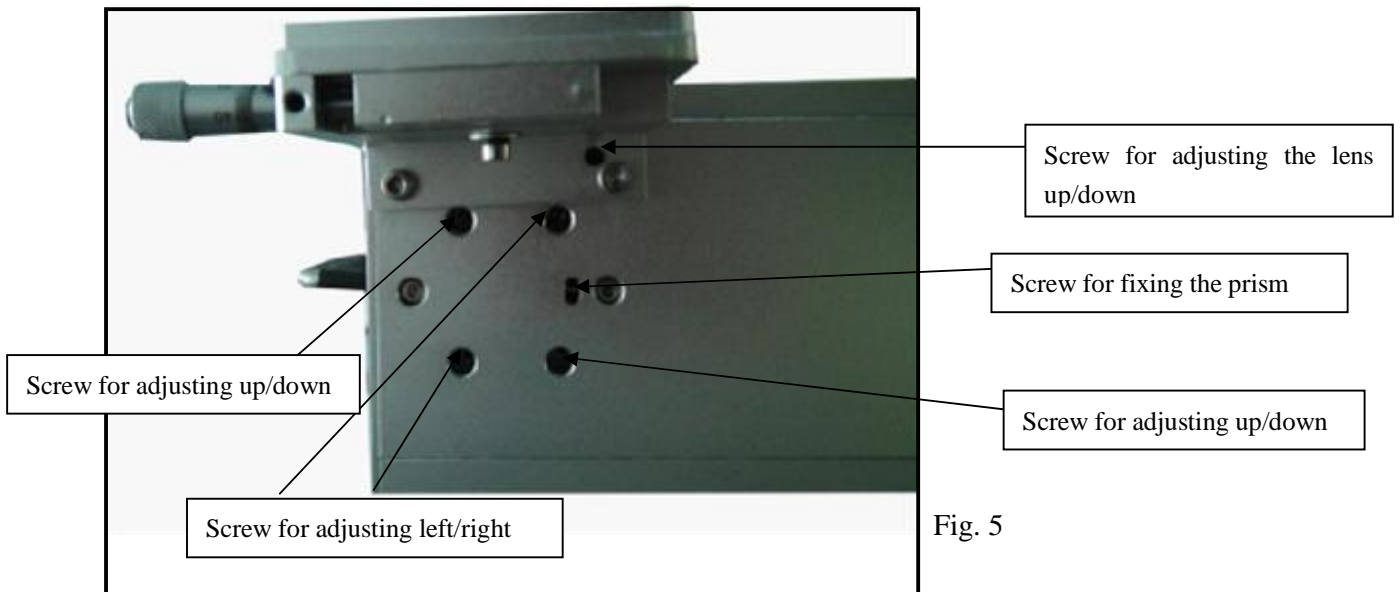
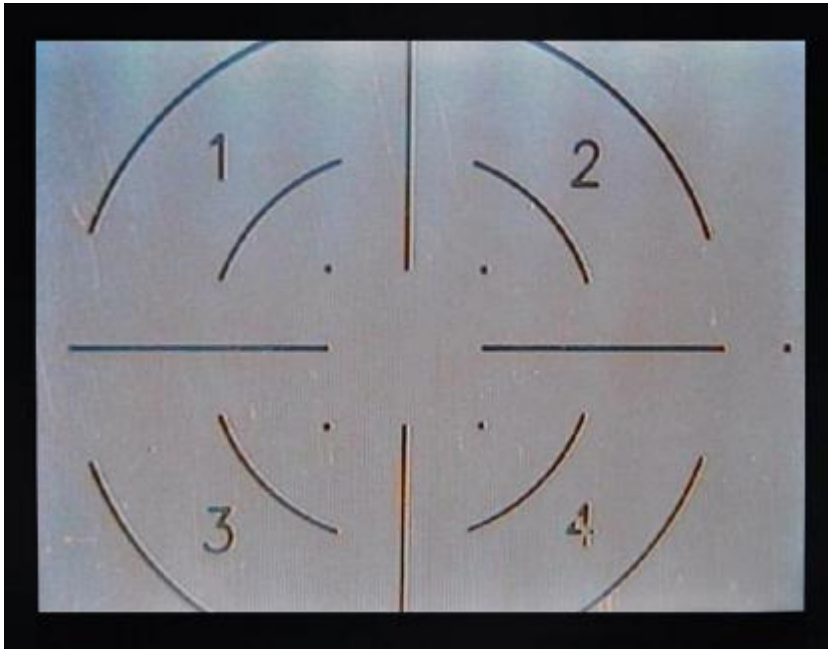


Fig. 5

5. Restore optical alignment system, press “down key” in the debugging column to control the hot air head to place alignment block down to mount with measure. When suction reaches the lowest point, vacuum is automatically cancelled. Then press “down key” to move up the suction.
6. Apply optical alignment system to inspect the mounting effect, complete superposition of alignment and measure shows the camera is exactly regulated, as shown in Fig. 4

Fig. 4:



VIII. Maintenance

In order to guarantee the machine function and prolong service life of the machine, during usage, we have to do some maintenance on the system regularly as follows

Parts Name	Maintenance	Period
Upper heater	Open the cover, clean the fan with high-pressure air	1 month
Drive mechanism of upper heater	Apply some butter on the lead rail, rack and gear and shaft.	1 month
Distribution box	Open the back cover of the machine, use vacuum cleaner to suck the dust and dirt, and check whether the components fixed well	3 month
Drive mechanism on optical system	Apply some butter on the drive parts	1 month
Bottom IR heating tube (protecting fence)	Clean the heating tube with dry cloth(do not use wet one)	1 week
PCB clamps	Apply some lubricant to the PCB supports and shaft of support guiding axle	1 month

IX. Alarm Malfunction and Troubleshooting

1. Upper part heating abnormal!

1. Reason:

- a. While heating, with more than 99% power consumption, if the practically-sensed temperature is below 150℃, the upper heater ℃ should heat up at a speed as more than twice as its upper rate.
- b. If the practically-sensed temperature is over 150℃, the upper heater should heat up at the speed of 0.1℃/S.
- c. If any of the above two situations cannot be accomplished, the system will give alarm.

1. Troubleshooting:

- a. make sure the temperature parameter setting is correct and if the upper speed rate setting is too big.
- b. check whether the blast blower, upper heating coil and upper temperature-sensing wire and upper SSR is working well.

2. Lower part heating abnormal!

1. Reason : While heating, with more than 99% power consumption, if the practically-sensed temperature is below 150℃, the lower heater should heat up at a speed as more than twice as its lower speed. If it can not reach that temperature standard continuously for 5s, the system will give alarm.

2. Troubleshooting:

- a. make sure the temperature parameter setting is correct
- b. check whether the blast blower, upper heating coil and upper temperature-sensing wire and lower SSR is working well.

X. Technical Parameter

Technical Parameter

ApplicablePCB	Max. PCB size	550X500mm
	Applicable size range	550X500mm
Applicable BGA	Max. size	70mm x 70mm
	Min. size	1mm x 1mm
	Max. weight	70g
Temp. control	top heater	350℃
	Lower heater	350℃
	Bottom heater	300℃
	Temperature control	16 sections of programmable temperature control setting
Power consumption	Power for operation	5600W
	Upper heater	1200W
	Lower heater	800W
	bottom heater	3600W
System parameter	Dimension (LxWxH)	850*750*630mm
	Weight	80KG
Input voltage	Power for requirement	AC 220V 5.5KW

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Please kindly understand we will not keep you informed if there are some revised parameters due to we have been developing and improving the technology always.

You are welcome to order other products or for some special demands that we would like to customize only for you.



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